etanercept monotherapy were analyzed. **RESULTS:** 100 eligible AS patient charts were abstracted; 44 on adalimumab (male:77%, mean age:36.4yrs, average months on adalimumab:27.2, 86% on 1st-biologic, 11% on 2nd-biologic) and 38 on etanercept (male:82%, mean age:42.8 yrs, average months on etanercept:55.5, 89% on 1st-biologic, 11% on 2nd-biologic). Top-5 comorbidites (adalimumab vs. etanercept) were obesity: 18% vs. 13%, depression/anxiety: 11% vs. 5%, dyslipidemia: 9% vs. 0%, heart disease: 2% vs. 5%, and other gastrointestinal: 5% vs. 3%. Among patients with available data, latest lab measures documented were (adalimumab vs. etanercept): ESR: 22.2mm/h vs. 20.4mm/h, CRP: 2.6mg/dl vs. 2.5mg/dl, and rheumatoid factor-positive: 2% vs. 3%. Latest disease severity measures documented were (adalimumab vs. etanercept): Swollen Joint Counts: 0.5 vs. 0.6, Tender Joint Counts: 1.0 vs. 0.8, HAQ: 0.8 vs. 0.3. **CONCLUSIONS:** Among AS patients, patients on adalimumab monotherapy were younger and on adalimumab for fewer average months than patients on etanercept. Most (>85%) were on their first biologic. The adalimumab group appeared to have a slightly higher disease burden and comorbidities. Factors influencing the observed patterns (including the choice of specific biologic for targeted patient profiles) may warrant further scrutiny to optimize therapeutic interventions and improve outcomes.

PSY9

## APROTININ FREE HEMOSTATIC SEALANT TO REDUCE BLOOD LOSS IN SURGICAL PATIENTS: A SYSTEMATIC REVIEW

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**OBJECTIVES:** Bleeding still a concern in surgical procedures and it is strong correlated with post-operative complications and increased hospital costs. Fibrin Sealant is wide used for this purpose, there are several commercially available fibrin sealants to reduce bleeding, but only one with the lack of bovine derivatives, which may, decreases the risk of allergic reaction. The aim of this study was to systematic review the safety and efficacy of aprotinin free hemostatic sealant for bleeding control. **METHODS:** The electronic databases PubMed, EMBASE, The Cochrane Central Register of Controlled Trials, Wiley and OVID, were reviewed. The date limit was set to December 31th of 2014. Only English literature was considered. The studies included were RCTs in surgical patients, the intervention being, aprotinin free hemostatic sealant, and the comparison, conventional hemostatic techniques. The primary outcome was to evaluated blood loss and time to achieve hemostatic and the second outcome was risk of blooding transfusion. **RESULTS:** 266 records were identified in all databases described, 17 records met the inclusion criteria. 15 studies (1492 patients) investigated the effect of intervention in several types of surgery for blooding loss, 12 out 15 studies observed less blood loss and time to achieve hemostatic with aprotinin free hemostatic sealant compared with conventional techniques. Four studies addressed the secondary outcome of this review, with 169 patients. Three of them investigated the use of aprotinin free hemostatic in knee arthroplasty, and only one trial (58 patients) showed significant risk reduction compared with control group (RR 0.31 95% IC 0.13-0.74). One study investigated the intervention in Hip arthroplasty and did not found any significance. No adverse events were reported. **CONCLUSIONS:** Aprotinin free hemostatic sealant is a safety approach for bleeding control, promoting less blood loss and time to achieve hemostatic. Risk of Blood transfusion needs further investigation.

PSY10

## COMPARATIVE EFFECTIVENESS AND SAFETY OF ARGATROBAN AND BIVALIRUDIN IN PATIENTS WITH SUSPECTED HEPARIN-INDUCED THROMBOCYTOPENIA

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**OBJECTIVES:** Heparin-induced thrombocytopenia (HIT) is a prothrombotic condition that requires immediate treatment, usually with direct thrombin inhibitors (DTIs). However, the treatment may cause major bleeding. Data comparing the effectiveness and safety of DTIs in the treatment of HIT is limited. Therefore, we compared the effectiveness and safety of two commonly used DTIs, argatroban and bivalirudin, in patients with suspected HIT in a real-world setting. **METHODS:** The Clinical Database/Resource Manager data from the UHC were used to identify hospitalized patients with suspected HIT discharged between 2009 to 2012. Using propensity scores, up to three argatroban-treated patients were matched to each bivalirudin-treated patient. The rates of thrombosis, major bleeding, amputation and mortality were compared using hazard ratios (HRs) from Cox proportional hazard regression models. **RESULTS:** Of the 2,408 matched patients, 709 (29.4%) received bivalirudin and 1,699 (70.6%) received argatroban. Compared to bivalirudin, argatroban exhibited a less harmful effect for major bleeding based on blood transfusion (6.1% vs. 11.4%; P<0.05). The result did not change when major bleeding was defined as blood transfusion with diagnostic codes. The risk of thrombosis (7.7% vs. 9.5%; P=0.14), amputation (2.1% vs. 2.0%; P=0.82) and mortality (24.2% vs. 25.5%; P=0.49) were similar in argatroban-and bivalirudin-treated patients. **CONCLUSIONS:** Among patients with suspected HIT, the use of argatroban compared to bivalirudin was associated with a decreased risk of major bleeding but was similar for thrombosis, amputation and mortality risk.

PSY11

## THE ACTUAL CLINICAL USE OF ANTIFUNGAL DRUGS IN PATIENTS WHO RECEIVED HEMATOPOIETIC STEM CELL TRANSPLANTATION IN JAPAN: A RETROSPECTIVE DATABASE STUDY

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**OBJECTIVES:** In this study, the actual clinical use of antifungal drugs in patients who received hematopoietic stem cell transplantation (HSCT) was investigated using a Japanese healthcare database. We also aim to identify characteristics of patients who need antifungal prophylaxis. **METHODS:** All claims data of patients who received HSCT between April 2010 and September 2013 were extracted from the database developed by MinaCare Co., Ltd. The database contains health check-up and claims data obtained from approximately 2.1 million members of employment-based health insurance groups and their dependents. We defined prophylactic use of antifungal medication as prescription of antifungal drugs for more than 14 consecutive days concomitantly with new quinolones, SMX/TMP and/or antivirus drugs. **RESULTS:** We identified 87 patients who received HSCT in the database altogether, of which 50 patients were considered to have received HSCT during the period examined. Among this population, 33 patients received the autologous peripheral blood stem cell transplantation and 14 patients received the cord blood stem cell transplantation (CBT). The major primary diseases were malignant lymphoma and multiple myeloma. Among the patients who received HSCT, 47 patients (94%) were prescribed with at least one antifungal, whereas those receiving CBT or those experienced graft versus host disease (GVHD) after transplantation had a tendency to be prescribed antimold drugs such as Micafungin and Voriconazole. In addition, 35 patients (70%) were prescribed antifungals as prophylaxis, as our definition above. **CONCLUSIONS:** This is the first investigation to demonstrate the percentage of HSCT recipients prescribed with antifungals, and that patients who received CBT or experienced GVHD had greater tendency to be prescribed antimold agents. In order to assess the risk factors of invasive fungal infection in HSCT patients, further investigation is needed.

PSY12

## ROLE OF BEHAVIORAL CONFOUNDING IN THE ASSOCIATION BETWEEN MARIJUANA USE AND BMI IN US ADULTS

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**OBJECTIVES:** Although the compounds in marijuana increase appetite, empirical studies have estimated that marijuana users have lower BMI and rates of obesity than non-users. Failure to account for differences in behaviors and attitudes increases the potential for confounding, since the decision to engage in marijuana use is tied to such attributes. This study investigated how estimates of the effect of marijuana use on BMI are altered by such considerations. **METHODS:** Participants in Wave IV of the National Longitudinal Study of Adolescent Health (Add Health) were interviewed between 2008 and 2009 (age 24-32). Multivariate regressions estimated the relationship between marijuana use and BMI (kg/m2). Regressions were then stratified by behavioral variables, including age of onset of marijuana use, concurrent alcohol use, self-assessed weight status, risk-propensity, and gender. **RESULTS:** Consistent with other empirical studies, marijuana use is associated with lower BMI in the core model (P=0.015). However, results change when models are stratified by behavioral variables. The negative association between marijuana use and BMI persists in individuals who drink more than once a week (P<0.05); however, in non-drinkers (who have tried alcohol), the magnitude and direction of the effect changes drastically (-0.996, p=0.015 vs. 7.96, p=0.007). Users who initiated use at 17 or older do not have lower BMI (P=0.937). In individuals who identified as satisfactory weight or overweight, there is no association (P=0.313 and P=0.748, respectively, vs. P = 0.005 in underweight individuals). Estimates are negative and significant in self-identified risk-takers (P=0.037), but not in non-risk-takers (P=0.549 and P=0.401). Results are not significant in females (P=0.976). **CONCLUSIONS:** The extent to which marijuana use influences BMI may depend on behavioral factors. Investigation is required to pinpoint behavioral attributes responsible for differences in BMI among marijuana users. The results have implications for assessing the role of marijuana in strategies to address obesity.

PSY13

## SECOND PROSPECTIVE, PHARMACOEPIDEMIOLOGIC DATABASE ANALYSIS OF PHENTERMINE AND TOPIRAMATE EXTENDED-RELEASE USAGE FROM A REPRESENTATIVE US SAMPLE OF OLDER PATIENTS

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**OBJECTIVES:** Phentermine and topiramate extended-release (PHEN/TPM ER) was approved by the US FDA in July 2012 for chronic weight management in combination with lifestyle modifications in adults with a body mass index (BMI) of ≥30 or ≥27kg/m2and ≥1 weight-related comorbidity. This interim second analysis of a Phase 4 post-marketing study assessed the medical appropriateness of prescribed PHEN/TPM ER by examining the total number of PHEN/TPM ER users, their demographics, weight-related comorbidities, and concomitant medication use over 18 months post-approval. **METHODS:** Data were collected from two databases between 17 September 2012 and 28 February 2014; the Qsymia Certified Pharmacy Network (QCPN) database collected age and gender information of all patients with ≥1 recorded PHEN/TPM ER prescription; the Humedica Electronic Health Record (HEHR) database collected age, gender, race, BMI, weight-related comorbidities, and concomitant medication use. . Older patients (≥61 years) were evaluated for this subanalysis. **RESULTS:** There were 160,853 and 5253 patients in the QCPN and HEHR databases, respectively. Of these, 22,579 and 649 patients from the QCPN and HEHR databases, respectively were ≥61 years. Among older patients in the HEHR database, 73% were female, and mean BMI (kg/m2) was 36 (84% had BMI ≥30 and 56% BMI ≥35) with <2% having BMI ≤25. In the HEHR database, 71% had dyslipidemia, 69% had hypertension, and 37% had type 2 diabetes mellitus. In addition, 90% were prescribed antihypertensive medications, 46% antidiabetic medications, and 26% antidepressants (including SSRIs and SNRIs). **CONCLUSIONS:** These data demonstrate consistencies between patient demographics, weight-related comorbidities, and concomitant medication use among older patients prescribed PHEN/TPM ER, subjects randomized in the CONQUER clinical trial, and the labeled indication. Over 18 months of PHEN/TPM ER use, medically appropriate individuals, including older patients, are utilizing PHEN/TPM ER as intended for chronic weight management.

PSY14
EVALUATING TRENDS IN CHRONIC PAIN PREVALENCE IN THE UNITED STATES VETERANS HEALTH ADMINISTRATION POPULATION
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**OBJECTIVES:** The current study examined chronic pain prevalence in the U.S. Veterans Health Administration (VHA) population. **METHODS:** The study sample was based on the VHA Medical SAS Datasets from fiscal year 2008 through 2012. All patients diagnosed with chronic pain throughout the study period were identified using International Classification of Diseases, 9th Revision, Clinical Modification diagnosis codes 338.2 and 338.4. The variation in the prevalence of chronic pain was assessed and categorized according to the pain scale. Pain score was determined using a scale ranging from 0 to 10 as reported by patients using the following categories: 1 to 4: mild, 5 to 6: moderate and ≥7: severe pain. To identify prior prevalence cases, we restricted continuous enrollment throughout that fiscal year and at least 2 years prior. **RESULTS:** In 2008, patients aged 45-64 had the highest percentage of patients with mild (56.4 %), moderate (60.7%) and severe (65.4%) pain. This trend was found for all study years. In 2008, white patients had the highest prevalence of mild (64.29%), moderate (62.07%) and severe (59.06%) pain. Similarly, in 2008, patients who resided in the South U.S. region had the highest prevalence of mild (32.89%), moderate (33.68%) and severe (36.39%) pain compared to other regions. This trend continued through all study years. Utah had the highest prevalence of chronic pain in 2008 (4.9%) and 2012 (24.0%). **CONCLUSIONS:** Among VHA beneficiaries with chronic pain, patients who were age 45-64 years had the highest prevalence of chronic pain. Also, white patients and those who resided in the South U.S. region had the highest prevalence of chronic pain.

PSY15
USE OF HYDROCODONE/ACETAMINOPHEN: PREVALENCE AND ESTIMATING EMERGENCY DEPARTMENT VISITS
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**OBJECTIVES:** An estimated 100 million adult Americans suffer from chronic pain. Prescribing opioids remains a primary treatment option for physicians. Hydrocodone/acetaminophen (HC/APAP) is the most commonly prescribed opioid in the US. However, the FDA recently rescheduled HC/APAP from Schedule III to II, due to negative outcomes, including its association with emergency department (ED) visits. The objective of this study was to estimate the impact of HC/APAP use in Texas on ED visits, based on the prevalence of HC/APAP prescriptions within the state. **METHODS:** A retrospective cohort design used data from the Drug Abuse Warning Network (DAWN) on ED visits associated with HC/APAP. Additionally, data from the Texas prescription drug monitoring program (PDMP) with patient level information for all Schedule II to V drugs dispensed within the state for a 12 month period was used to assess the prevalence of patients taking HC/APAP. This analysis yielded estimates of potential ED visits related to HC/APAP within Texas. **RESULTS:** National estimates from DAWN reveal that ED visits related to HC/APAP increased from 23.6 per 100,000 population in 2004 to 50.2 per 100,000 population in 2011. Data from the Texas PDMP contained 39,904,964 distinct prescriptions for all Schedule II to V controlled substances for the period from June 2013 to May 2014 within the state of Texas. **CONCLUSIONS:** The use of HC/APAP requires more active monitoring in order to reduce the number of ED visits associated with its use. Future studies should investigate whether rescheduling HC/APAP leads to reduction of related ED visits.

PSY16
MORTALITY RISK IN PATIENTS WITH PSORIASIS
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**OBJECTIVES:** This study examined mortality risk among patients with psoriasis in the United States. **METHODS:** MarketScan databases were linked to the Social Security Administration death file to select adults with ≥1 inpatient or ≥2 outpatient diagnoses of psoriasis (ICD-9-CM 696.1x) during the study period (1/1/2006 to 6/30/2014). The first psoriasis diagnosis was the index date. Patients had 6 months of pre index continuous enrollment and were followed until the earliest of death or end of the study period. Comorbidities during the pre-index period were examined. Mortality incidence was calculated for psoriasis patients by comorbidities and age group. A Cox proportional hazards model was used to identify predictors of mortality. **RESULTS:** The sample comprised 102,573 psoriasis patients with mean age of 52.7 years (yrs). Patients were followed for an average of 4.9 yrs and 3.4% died during the study period. The mean age at death was 75.5 yrs. The mortality rate was 7.0 per 1,000 person-years (PY) and increased with age (0.8 per 1,000 PY in patients aged 18-24 yrs versus 45.5 per 1,000 PY in patients ≥ 75 yrs). The mortality rate was significantly higher for psoriasis patients with (versus without) diabetes (17.5 vs. 5.7), hypertension (12.6 vs. 4.8), coronary heart disease (24.9 vs. 5.4), cerebrovascular disease (31.9 vs. 6.2), and peripheral vascular disease (36.8 vs. 6.1) (all $p<0.05$). Multivariate analysis suggested that older age, female gender, higher Charlson Comorbidity Index (CCI) score, and presence of comorbidities (diabetes, coronary heart disease, cerebrovascular disease, peripheral vascular disease, and malignancy) were associated with increased risk of mortality amongst psoriasis patients (all $p<0.001$). **CONCLUSIONS:** Among patients with psoriasis, the rate of mortality was 7.0 per 1,000 person-years. Diabetes, cardiovascular diseases, malignancy, female gender, older age, and increased CCI scores were associated with an elevated risk of mortality in this cohort of psoriasis patients.

## SYSTEMIC DISORDERS/CONDITIONS – Cost Studies

PSY17
BUDGET IMPACT ANALYSIS OF FACTOR REPLACEMENT THERAPY WITH TUROCTOCOG ALFA IN THE TREATMENT OF HEMOPHILIA A
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**OBJECTIVES:** This study aimed to determine the budget impact of adding turoctocog alfa to a U.S. health plan insurer's formulary for the treatment of hemophilia A. **METHODS:** A budget impact model was developed to evaluate factor replacement therapy costs, for patients with hemophilia A (without inhibitors), from the perspective of a US managed care plan. Key model inputs included benefit plan characteristics (i.e. number of members and time frame of the model), patient characteristics (i.e. number of pediatric and adult patients; mean weight), treatment characteristics (i.e. prophylaxis, on-demand, or perioperative treatment), and disease outcomes (i.e. annual bleed rate, severity level of bleeding episode, bleed control, and major surgery). The model compared treatment with turoctocog alfa versus marketed recombinant and plasma-derived FVIII alternatives. For children and adults, base case weight-based dosage and frequency for prophylaxis was assumed to follow the Malmö Protocol, whereas on-demand and perioperative dosages were based on respective product package inserts. Market share was indexed at Year 1. All costs were based on estimated WAC drug costs (US dollars), and product information current as of January 15, 2015. **RESULTS:** For a hypothetical managed care plan with 1,000,000 members, the estimated number of hemophilia A patients was 39, based on US prevalence data. Assuming proportional adoption of turoctocog alfa from all branded rFVIII and plasma-derived FVIII, total annual treatment costs were $10,133,595 without turoctocog alfa and $10,138,671 with turoctocog alfa, resulting in a budget impact of $5,076 or $0.00042 per member per month (PMPM). Results were sensitive to prevalence of hemophilia A, drug cost, proportion of patients on prophylaxis, and proportion of major bleeding episodes for patients treated on-demand, based on one-way sensitivity analyses. **CONCLUSIONS:** Inclusion of turoctocog alfa on a formulary provides a budget neutral treatment option, having a negligible budget impact on the annual pharmacy budget.

PSY18
MANAGED CARE ORGANIZATION BUDGET IMPACT OF ADDING RECOMBINANT FACTOR VIII FC FUSION PROTEIN (RFVIIIFC) TO THE FORMULARY FOR THE TREATMENT OF HEMOPHILIA A
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**OBJECTIVES:** To estimate the budget impact of adding rFVIIIFc to a managed care organization (MCO) formulary in the United States **METHODS:** A model was developed in Microsoft® Excel 2010 to evaluate the budget impact of including rFVIIIFc on formularies along with other recombinant FVIII (rFVIII) therapies over a 2-year time horizon. The model compared the drug-related costs of an MCO formulary containing conventional FVIII treatments with the costs of a formulary that also includes rFVIIIFc. The number of people with hemophilia A in the MCO was estimated using published prevalence data and was limited to adults with severe hemophilia A, free from FVIII inhibitors (neutralizing antibodies), receiving treatment with rFVIII therapy. It was assumed that 55% of patients receive prophylaxis therapy while the remaining 45% receive episodic therapy. Market share of rFVIIIFc was assumed to increase from 0% to 8.5% in year 1 and year 2. Medication costs were the only resource included in the budget impact model. The annual costs associated with factor replacement therapy were estimated by factor unit costs (acquisition cost) and by annual factor consumption. Annual factor consumption and bleeding rates were estimated using clinical trial and real world data. **RESULTS:** The estimated budget impact of adding rFVIIIFc to the formulary was associated with a budget increase of 1.4%/year for a private payer population of 1,000,000 plan members, with an estimated 21 members receiving treatment for hemophilia A. The overall impact to the budget was estimated to be $121,176 per year which corresponds to $0.01 per member per month, largely due to patients switching from episodic to prophylaxis therapy. Switching to rFVIIIFc therapy was projected to reduce the annual bleed rate by approximately 3.1 bleeds/patient/year, with an incremental cost of $1,880 per bleed avoided. **CONCLUSIONS:** Introduction of rFVIIIFc into MCO formularies may be associated with minimal budget impact.

PSY19
ECONOMIC IMPLICATIONS OF INCREASING USAGE OF CALCIUM-FREE BALANCED CRYSTALLOID SOLUTIONS (BAL) VERSUS 0.9% SALINE FOR INTRAVENOUS (IV) FLUID THERAPY IN PATIENTS WITH SYSTEMIC INFLAMMATORY RESPONSE SYNDROME (SIRS) IN US HOSPITALS
Makhija D[1], Munson S[2], Khangulov VS[2], Peyerl FW[2], Paluszkiewicz SM[2], Laplante S[1], Liu FX[1]
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**OBJECTIVES:** Growing emphasis on cost containment in healthcare means that hospitals must develop strategies to minimize adverse clinical outcomes while increasing cost efficiency. A propensity-matched retrospective analysis of SIRS patients from a large US electronic health record (EHR) database identified significantly reduced odds of serious complications, when IV fluid therapy was predominantly with BAL versus 0.9% saline.[1]This analysis evaluates the economic implication of increasing usage of BAL for IV fluid therapy in SIRS patients from a US hospital perspective. Impact of Intravenous Fluid Composition on Outcomes in Patients with the Systemic Inflammatory Response Syndrome Andrew D. Shaw; Carol R. Schermer, Dileep N. Lobo, Sibyl H. Munson, Victor Khangulov, David Hayashida, and John A. Kellum: submitted for publication. **METHODS:** A budget impact model (BIM) was developed to assess the impact of increased usage of BAL in SIRS patients. Model parameters combined clinical inputs derived from the retrospective EHR analysis with fluid costs and complication-associated costs obtained from published reports